

April 22, 2008

Dr. Dennis Knepp
P.O. Box 1014
Monterey, CA 93942

Dr. Jeff Haferman
P.O. Box 30
Monterey, CA 93942

RE: Your letter dated April 16, 2008

Dear Drs. Knepp and Haferman:

CDFA is committed to developing and communicating a full understanding of physical properties of the aerial applications and their fate in the environment. On March 14, I e-mailed a letter and graph (Figure 1) to the Light Brown Apple Moth Environmental Advisory Task Force (EATF) showing the relationship between Checkmate LBAM-F mean particle diameter and relative volume. The graph was provided by Suterra LLC, who used state of the art equipment to generate it, and is correct. The letter was posted on the CDFA web site on March 13.

Dr. Knepp, maybe you have forgotten that you called me on April 04 about the letter. You did suggest that I add the term "by volume" to clarify the letter for the general public. I agreed and the amended letter was posted on the web site on April 11.

There are a few things of which you may not be aware. First, I sent a sample from our Checkmate LBAM-F stock to a third party laboratory in Illinois to confirm the relationship between mean particle diameter and relative volume. This was done upon the request of a member of the LBAM Environmental Advisory Task Force (EATF), and without the knowledge of the manufacturer. I have just recently received the third party laboratory graph and it agrees, within the limits of variation between laboratories and between samples, with Suterra's graph (Figure 2).

Second, the third party laboratory reports an arithmetic mean particle diameter on a particle number basis, rather than a volume basis, of 16.7 micro-meters (Figure 3). You have estimated that the mean particle diameter on a particle number basis is about 17 micro-meters. We also discussed this in general terms during the April 04 phone conversation.

Third, the CDFA has contracted with a local pesticide management company to do wind tunnel tests on the nozzle used in the aerial pheromone applications. This wind tunnel can achieve wind speeds

of 150 miles per hour, close to the 165 actually used. Tests were recently completed with the same mix of water and Checkmate LBAM-F that was used in the aerial releases. Findings have shown that the mean volume diameter of the droplets in the wind tunnel is approximately 500 micro-meters (Figure 4). The USDA had previously estimated the mean diameter to be 500 micro-meters or greater based on the use of a less sensitive drift card technique.

Fourth, the CDFA is contracting with the UC Davis Agricultural Engineering Department to do theoretical calculations of the droplet formation and fate. While evaporation is a possibility, I would like to remind you that the CDFA only releases pheromone at night, and that the central coast is a maritime environment.

Fifth, the CDFA only uses products approved by the US Environmental Protection Agency and the California Department of Pesticide Regulation. Before any registration is granted, including a Section 18 registration, EPA and DPR scientists review relevant toxicology information and only approve registration if safety standards are met. These reviews are product based; that is, the registration is for both the pheromone and associated inert ingredients. The product is so safe that there is not a re-entry interval on the label.

Sixth, USDA summarized all available relevant toxicology and environmental toxicology about pheromone release in their Environmental Assessments. These Environmental Assessments have been on the CDFA web site since before aerial sprays began.

Seventh, you say in your letter that I “failed to recommend the inhalation study.” As a matter of public record, I told the EATF by e-mail and posted to our web site on April 01, that the USDA has contracted and started a battery of acute toxicology tests for all LBAM pheromone products that could be used in 2008 including inhalation studies. I will be making regular updates as this test progresses. The CDFA is asking the USDA to look for sub-lethal effects in the acute toxicity tests.

Eighth, you may not be aware that about 80 percent of the formulated Checkmate LBAM-F is water and other formulating ingredients, which act as a carrier for the micro-capsules. The micro-capsules are made of the pheromone (about 18 percent) and polyurea (about three percent). I calculate a “worst case” PM_{10} as follows:

Assume that 100 percent of the micro-capsules are distributed evenly in the lower 3 meters air column and none of the PM_{10} micro-capsules are in water droplets. Given that the pheromone application rate is 15 g/acre, polyurea application rate . 3 g/acre and one acre = 4046.7 meter squared, then:

$$1.2\% * 18 \text{ g/acre} * 10^6 \text{ micrograms/g} / 4046.7 \text{ m}^2/\text{acre} / 3 \text{ m} = 18 \text{ micrograms/m}^3$$

This “worst scenario” is 12 percent of the 24-hour national standard for PM_{10} and it is also only 36 percent of the more conservative standard. The level of 18 micrograms/meter³ is not a high concentration relative to typical urban environment, particularly near or on busy roadways (www.epa.gov/air/particle/pollution/standards.html).

Therefore, I conclude that the graph that I e-mailed to the EATF in regards to this subject was and is correct, that the release of Checkmate LBAM-F was done according to the registered product label, and all safety standards were met.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert Leavitt" followed by a stylized monogram or initials.

Robert Leavitt
Branch Chief



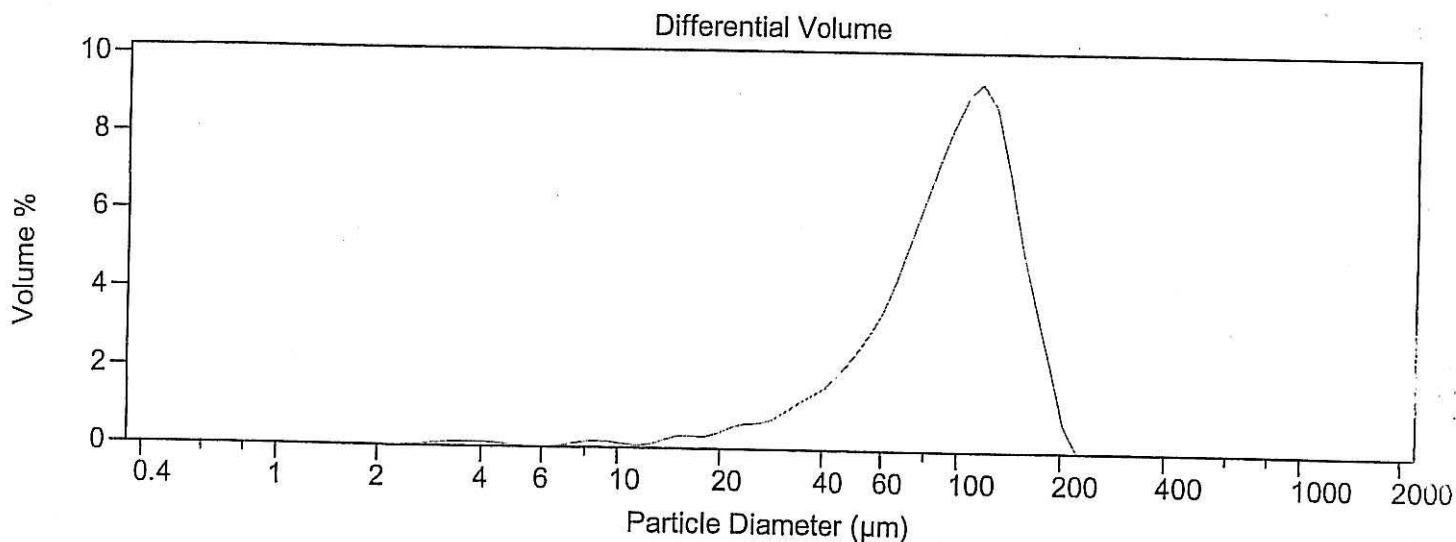
COULTER

LS Particle Size Analyzer

FIGURE 1

12 Mar 2008

File name: x71036.\$01 Group ID: X71036
Sample ID: 121059
Operator: DMB Run number: 1
Comments: Representative Sample of LBAM-F
Optical model: Fraunhofer
LS 230 Small Volume Module
Start time: 8:25 6 Sep 2007 Run length: 59 Seconds
Obscuration: 43%
PIDS Obscur: 66%
Software: 2.05 Firmware: 2.02 2.02



Volume Statistics (Arithmetic)

x71036.\$01

Calculations from 0.375 μm to 2000 μm

Volume 100.0%
Median: 97.21 μm

% <	1.2	25	50	75	90
Size μm	10.01	67.97	97.21	125.8	152.2

FIGURE 2

ELZONE^(tm) Particle Size Analysis

For: CALIFORNIA DEPT. OF FOOD AND AG.
1220 N. ST. RM 340
SACRAMENTO, CA 95814

By: PARTICLE TECHNOLOGY LABS, LTD.
555 ROGERS STREET
DOWNERS GROVE, IL 60515

Operator: AK

Comments:

VOLUME (mass) DATA

Date done: 7:11 08 Apr 2008

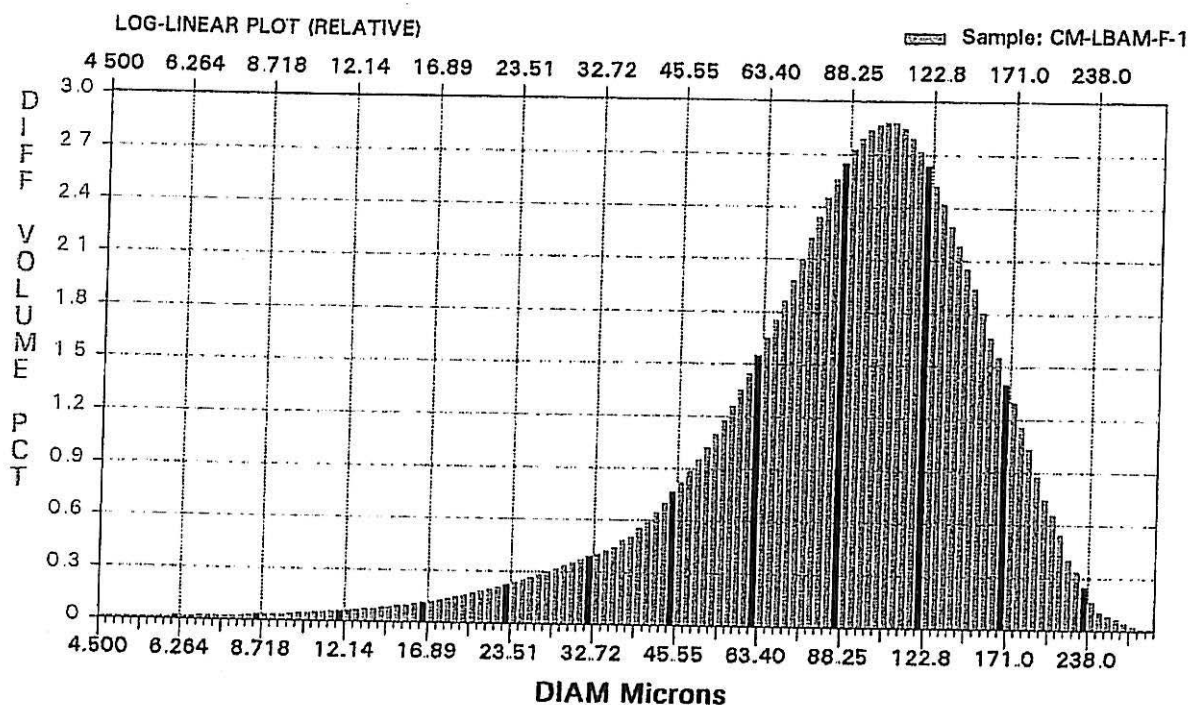
Disk File: 16097-1Z.HST

Sample #: CM-LBAM-F-1

Lot/Job #: 16097 : 63965

Material: CHECKMATE LBAM-F

Source: MR. ROBERT LEAVITT



Geometric Mean Size: 85.27 um
Geom. Std Deviation: 1.751 um
Geom. Skewness: -9.660
Geom. Coeff Variation: 2.053

Arithmetic Mean Size: 97.27 um
Median Size: 90.08 um
Mode Size: 102.2 um
Kurtosis: 2.626
Arith Std Deviation: 47.07 um

-- PERCENTILES --

0.100% Volume above 261.2 um
1.000% Volume above 219.7 um
6.000% Volume above 175.8 um
22.00% Volume above 130.1 um
50.00% Volume above 92.53 um
78.00% Volume above 60.90 um
94.00% Volume above 31.76 um
99.00% Volume above 14.05 um
99.90% Volume above 6.552 um

FIGURE 3

ELZONE^(tm) Particle Size Analysis

For: CALIFORNIA DEPT. OF FOOD AND AG.
1220 N. ST. RM 340
SACRAMENTO, CA 95814

By: PARTICLE TECHNOLOGY LABS, LTD.
555 ROGERS STREET
DOWNERS GROVE, IL 60515

Operator: AK

Comments:

POPULATION (count) DATA

Date done: 7:11 08 Apr 2008

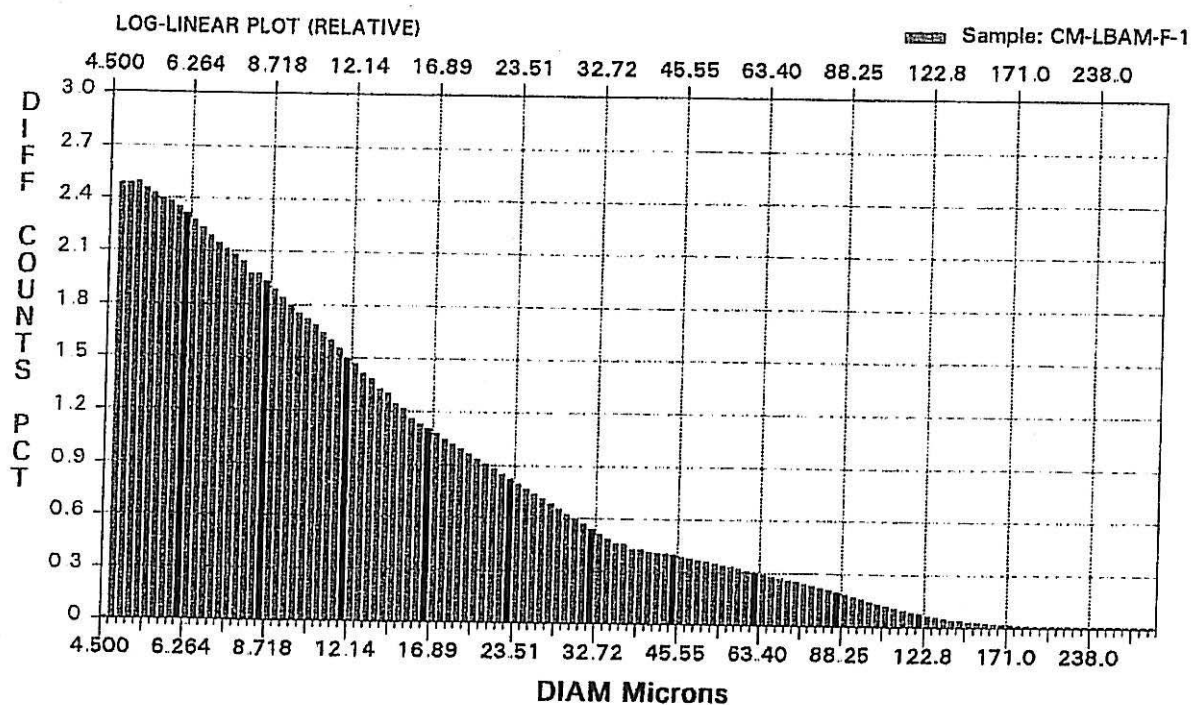
Disk File: 16097-1Z.HST

Sample #: CM-LBAM-F-1

Lot/Job #: 16097 : 63965

Material: CHECKMATE LBAM-F

Source: MR. ROBERT LEAVITT



Geometric Mean Size: 11.79 um
Geom. Std Deviation: 2.122 um
Geom. Skewness: 3.240
Geom. Coeff Variation: 18.00

Arithmetic Mean Size: 16.72 um
Median Size: 9.790 um
Mode Size: 4.912 um
Kurtosis: 10.956
Arith Std Deviation: 19.44 um

-- PERCENTILES --

0.100% Counts above 152.0 um
1.000% Counts above 98.01 um
6.000% Counts above 50.58 um
22.00% Counts above 20.06 um
50.00% Counts above 9.806 um
78.00% Counts above 6.185 um
94.00% Counts above 4.955 um
99.00% Counts above 4.605 um
99.90% Counts above 4.578 um

4/8/08
4/25/08
AK
1104

Figure 4

Arena Pesticide Management/CDFA Aerial Nozzle Output

